

#51B

**IB. AMENDMENTS TO THE CLAIMS**

Please enter the amendments to claims 30, 31, 33, 37, 44, 50, and 55, as shown below.

Please enter new claims 57-87, as shown below.

1.-29. (Canceled)

30. (Currently Amended) A nucleic acid according to claim 57, wherein said nucleic acid comprises a fragment of at least about 25 contiguous nucleotides of a nucleotide sequence having at least about 90% nucleotide sequence identity to the nucleotide sequence set forth in SEQ ID NO:01.

31. (Currently Amended) An isolated nucleic acid molecule that hybridizes under stringent conditions to a nucleic acid molecule comprising the nucleotide sequence set forth in SEQ ID NO:01, or its complementary sequence, wherein stringent hybridization conditions comprises hybridization at 50°C or higher in a solution comprising 15 mM sodium chloride and 1.5 mM sodium citrate, wherein said nucleotide sequence encodes a functional domain of glycosyl sulfotransferase-3.

32. (Previously Added) An expression vector comprising the nucleic acid of claim 31.

33. (Currently Amended) ~~An isolated~~ A host cell comprising the expression vector of claim 32.

34. (Previously Added) The host cell of claim 33, wherein the cell is prokaryotic.

35. (Previously Added) The host cell of claim 33, wherein the cell is eukaryotic.

36. (Previously Added) A method of producing a glycosyl sulfotransferase-3 polypeptide, said method comprising:

growing a cell according to claim 33, whereby said polypeptide is expressed; and  
isolating said polypeptide substantially free of other proteins.

37. (Currently Amended) ~~An~~ The isolated nucleic acid of claim 60, wherein said nucleic acid comprises ~~comprising~~ a nucleotide sequence which encodes a fragment of at least about 15 contiguous amino acids of the sequence depicted in SEQ ID NO:02, wherein said fragment comprises a sulfate acceptor binding site of glycosyl sulfotransferase-3 glycosyltransferase-3.

38. (Previously Added) The nucleic acid of claim 37, wherein said acceptor binding site-encoding sequence comprises amino acids 50 to 78 of SEQ ID NO:02.

39. (Previously Added) An expression vector comprising the nucleic acid of claim 37.

40. (Previously Added) An isolated host cell comprising the expression vector of claim 37.

41. (Previously Added) The host cell of claim 40, wherein the cell is prokaryotic.

42. (Previously Added) The host cell of claim 40, wherein the cell is eukaryotic.

43. (Previously Added) A method of producing a polypeptide comprising a sulfate acceptor binding site of glycosyl sulfotransferase-3, said method comprising:  
growing a cell according to claim 40, whereby said polypeptide is expressed; and  
isolating said polypeptide substantially free of other proteins.

44. (Currently Amended) ~~An~~ The isolated nucleic acid of claim 60, wherein said nucleic acid comprises ~~comprising~~ a nucleotide sequence which encodes a fragment of at least about 15 contiguous amino acids of the sequence depicted in SEQ ID NO:2, wherein said fragment comprises a sulfate donor binding site of glycosyl sulfotransferase-3 glycosyltransferase-3.

45. (Previously Added) The nucleic acid of claim 44, wherein said donor binding site comprises the amino acid sequence Val-Arg-Tyr-Glu-Asp-Leu (SEQ ID NO:9).

46. (Previously Added) An expression vector comprising the nucleic acid of claim 44.

47. (Previously Added) An isolated host cell comprising the expression vector of claim 46.

48. (Previously Added) The host cell of claim 47, wherein the cell is prokaryotic.

49. (Previously Added) The host cell of claim 47, wherein the cell is eukaryotic.

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50. (Currently Amended) A method of producing a polypeptide comprising a sulfate donor binding site of glycosyl sulfotransferase-3 ~~glycosyltransferase-3~~, said method comprising:  
 growing a cell according to claim 47, whereby said polypeptide is expressed; and  
 isolating said polypeptide substantially free of other proteins.

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51. (Previously Added) An isolated nucleic acid comprising at least 25 contiguous nucleotides of the sequence set forth in SEQ ID NO:01.

52. (Previously Added) An expression vector comprising the nucleic acid of claim 51.

53. (Previously Added) An isolated host cell comprising the expression vector of claim 51.

54. (Previously Added) A method of producing a glycosyl sulfotransferase-3 polypeptide or fragment thereof, said method comprising:  
 growing a cell according to 53, whereby said glycosyl sulfotransferase-3 polypeptide is expressed; and  
 isolating said glycosyl sulfotransferase-3 polypeptide substantially free of other proteins.

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55. (Currently Amended) An isolated nucleic acid comprising a sequence which encodes a fragment of at least about 15 contiguous amino acids of a polypeptide having at least about 60% amino acid sequence identity to the sequence depicted in SEQ ID NO:02, wherein said fragment comprises a sulfate acceptor binding site of glycosyl sulfotransferase-3 ~~glycosyltransferase-3~~.

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56. (Previously Added) An isolated nucleic acid comprising a sequence which encodes a fragment of at least about 15 contiguous amino acids of a polypeptide having at least about 60% amino acid sequence identity to the sequence depicted in SEQ ID NO:02, wherein said fragment comprises a sulfate donor binding site of glycosyltransferase-3.

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-- 57. (New) An isolated nucleic acid comprising a nucleotide sequence having at least about 90% nucleotide sequence identity to the sequence set forth in SEQ ID NO:1, wherein said nucleic acid encodes a glycosyl sulfotransferase-3.

58. (New) The isolated nucleic acid of claim 57, wherein said nucleic acid comprises a nucleotide sequence having at least about 95% nucleotide sequence identity to the sequence set forth in SEQ ID NO:1.

59. (New) The isolated nucleic acid of claim 57, wherein said nucleic acid comprises the nucleotide sequence set forth in SEQ ID NO:1.

60. (New) An isolated nucleic acid comprising a nucleotide sequence which encodes a fragment of at least about 15 contiguous amino acids of the sequence depicted in SEQ ID NO:02, wherein said fragment comprises a functional domain of glycosyl sulfotransferase-3.

61. (New) The nucleic acid of claim 60, wherein said nucleotide sequence encodes a fragment of at least about 50 contiguous amino acids of the sequence depicted in SEQ ID NO:02.

62. (New) The nucleic acid of claim 60, wherein said fragment catalyzes the transfer of a sulfate group from a donor compound to a sulfate acceptor.

63. (New) A composition comprising the nucleic acid of any one of claims 31, 51, 55, 56, 57, 58, 59, and 60.

64. (New) The composition according to claim 63, wherein the nucleic acid comprises a nucleotide sequence that encodes a glycosyl sulfotransferase-3 that catalyzes the transfer of a sulfate group from a donor to a sulfate acceptor.

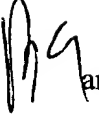
65. (New) The composition according to claim 63, wherein said composition further comprises a test agent.

66. (New) The composition according to claim 63, wherein said composition further comprises a sulfate donor.

67. (New) The composition according to claim 63, wherein said composition further comprises a sulfate acceptor.

68. (New) The composition according to claim 67, wherein said sulfate acceptor is a selectin.

69. (New) An expression vector comprising a nucleic acid according to any one of claims 31, 51, 55, 56, 57, 58, 59, and 60, wherein said nucleic acid is operably linked to an exogenous control region.

 70. (New) The expression vector of claim 32, wherein said nucleic acid is operably linked to an exogenous control region.

71. (New) The nucleic acid of claim 30, wherein said nucleic acid comprises a fragment of at least about 50 contiguous nucleotides of a nucleotide sequence having at least about 90% nucleotide sequence identity to the nucleotide sequence set forth in SEQ ID NO:01.

72. (New) The nucleic acid of claim 30, wherein said nucleic acid comprises a fragment of at least about 100 contiguous nucleotides of a nucleotide sequence having at least about 90% nucleotide sequence identity to the nucleotide sequence set forth in SEQ ID NO:01.

73. (New) The nucleic acid of claim 51, wherein said nucleic acid comprises at least 50 contiguous nucleotides of the sequence set forth in SEQ ID NO:01.

74. (New) The nucleic acid of claim 51, wherein said nucleic acid comprises at least 100 contiguous nucleotides of the sequence set forth in SEQ ID NO:01.

75. (New) The nucleic acid of claim 55, wherein said nucleic acid comprises a sequence which encodes a fragment of at least about 50 contiguous amino acids of a polypeptide having at least about 60% amino acid sequence identity to the sequence depicted in SEQ ID NO:02.

76. (New) The nucleic acid of claim 55, wherein said fragment catalyzes the transfer of a sulfate group from a sulfate donor to a sulfate acceptor.

77. (New) A composition comprising a host cell, wherein said host cell comprises a nucleic acid that comprises a nucleotide sequence having at least about 75% nucleotide sequence identity to the sequence set forth in SEQ ID NO:01, wherein said nucleotide sequence encodes a glycosyl sulfotransferase-3 polypeptide that catalyzes the transfer of a sulfate group from a sulfate donor to a sulfate acceptor.

By 78. (New) The composition according to claim 77, wherein said host cell comprises a nucleic acid that comprises a nucleotide sequence having at least about 90% nucleotide sequence identity to the sequence set forth in SEQ ID NO:01.

79. (New) The composition according to claim 77, wherein said host cell comprises a nucleic acid that comprises a nucleotide sequence having at least about 95% nucleotide sequence identity to the sequence set forth in SEQ ID NO:01.

80. (New) The composition according to claim 77, further comprising a sulfate donor.

81. (New) The composition according to claim 77, further comprising a sulfate acceptor.

82. (New) The composition according to claim 81, wherein the sulfate acceptor is a selectin.

83. (New) The composition according to claim 77, further comprising a test agent.

84. (New) An expression vector comprising the nucleic acid of any one of claims 57-59.

85. (New) A host cell comprising the expression vector of claim 84.

86. (New) The host cell of claim 85, wherein the cell is prokaryotic.

87. (New) The host cell of claim 85, wherein the cell is eukaryotic. --

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